

APPLIED SCIENCE.

ELASTIC GLASS.—The process for the preparation of this remarkable substance discovered by Bastic, and still in some measure secret, is said to be very simple, cheap, and unattended with danger. All various injurious to the health are avoided. The inventor estimates that the whole operation can be completed in a few hours, and that the expense will not reach 40 to 50 per cent. of the value of ordinary kinds of glass. Repeated experiments indicate that the resistance to blows is 50 times that of ordinary glass, and that it is unaffected either by sudden cooling, as in cold water, or by heating it in a stove. A plate thrown upon the floor rebounded with such violence, that the fragments were broken into very small crystals, instead of into larger and smaller pieces, thus showing a peculiar change in molecular constitution. Samples of it have been made in the form of looking-glasses, large plates, lamp-chimneys, cups and saucers, smoking utensils, tubes, watch-glasses, &c.

SCIENCE IN GERMANY.

RECENT SCIENTIFIC PUBLICATIONS.

THE TRENTE'S REPORT OF AGASSIZ'S LECTURES REPRODUCED IN GERMAN.—INTRODUCTION ON THE BARWINIAN THEORY.—MORSE'S AFRICAN EXPLORATIONS—AN IMPORTANT ETHNOLOGICAL WORK PUBLISHED.

FROM AN OCCASIONAL CORRESPONDENT OF THE TRIBUNE.

LONDON, Aug. 2.—One of the most recent German books is "The Plat of Creation," by Louis Agassiz, which I find to be a translation of Agassiz's last series of Cambridge lectures, as they appeared in the *New-York Tribune*. The illustrations given therein being also reproduced. Nothing, however, is said by the translator of the enterprise of the journal which gave these lectures to the public, and without which, in view of Agassiz's habit of extemporaneous speaking, it is safe to say never would have been published. Still the appearance of this book affects the merits of the Tribune's scientific publications, one of which has in this instance been secured a permanent place in German scientific literature. Though marvellous or specialists in industry and concentrativeness, German scientists are generally backward in the art of presenting scientific truth in popular form, and I think the same might do still more good by translating a few more of this Tribune's Extra.

EXTENDING THE COMFORT AND INCREASING THE TONE OF STRINGED INSTRUMENTS.—At a recent meeting of the Musical Association of London, Dr. Stone stated that there are three ways in which a string may be made to give very slow vibrations, viz. by increasing its length, its thickness, or its density. He had adopted the third plan by covering a catgut string with heavy copper-wire, which proved to be fairly successful. This had been improved upon by reinforcing the vibrations by means of longitudinal struts or bars applied to the double bass violin. Four strips of white wood curved to fit elliptical figure, are pressed parallel from end to end, on the inside of which, towards the middle, a "wolf," or inequality and falsehood of tone, with a great excess of power throughout the range of the instrument. Dr. Zucharius has however engaged in preparing to establish a new magazine, to be devoted to biology and the development theory, an undertaking in which he enjoys the cooperation of some of the best writers in the domain of zoology and comparative anatomy. Darwin himself has vindicated the greater interest in the magazine, and has expressed in a letter to Dr. Zucharius his best wishes for its success. Dr. Zucharius is author of a German work on insectivorous plants, which has lately been translated into English.

Edward Mohr, who has earned a reputation as one of the most enterprising, if not one of the most scientific of German travelers, has just published an interesting book, entitled "Nach den Victoriafischen des Zambezi," containing an account of his explorations in Africa. After traveling over a large part of the civilized world on both continents, a restless spirit of adventure drove Mohr to South Africa about 10 years ago, where in the pleasures and dangers of a long extended hunting tour, he found the excitement which his nature craved. Returning from this trip in 1867, he formed the resolution to visit Africa and devote himself to the exploration of a more scientific character. By studying zooloocial, practical astronomy and civil engineering, he acquired considerable facility and accuracy in taking latitude and longitude, as well as making topographical observations. Securing the cooperation of a competent geologist, Adolf Hiltner, and with a splendid outfit in the way of arms, instruments, and money, the gifts of friends, in the beginning of 1868, he started for Africa, and after a month's travel on the top of that, and when well made, this joint seems entirely secure. Ordinary indiarubber joints are of no use in these experiments, as when the vacuum nearly perfect they allow oxygenated air to pass through as rapidly as the pump will remove it. A pump that lifts water perfectly for a few feet, but not over a day or two, is made by a mixture of 8 parts of resin and 8 of beeswax.

FIFTH ANNUAL REPORT OF THE FISH COMMISSIONERS OF NEW-JERSEY.—The fifth annual report for the year 1874 of the Commissioners of Fisheries of the State of New-Jersey, contains a notice of the work done during the past year. The report refers in appropriate terms to the death of Dr. Slack, one of the oldest Commissioners of that State, and one of the most successful fish culturists in this country. In reference to salmon—the most important fish of the Delaware River—the report states that the catch during the year 1874 was 50 per cent. more than in 1873, that the average weight of the fish was considerably increased. Attention is turned to the better observance of the fishery laws for the past five years, especially that requiring a weekly close time of 30 hours, and also to the removal of fish-habits in the Delaware, by which great numbers of young fish had heretofore been destroyed. The Commissioners urge the enforcement of the law in reference to this class of offenders, and the report also gives a very important feature in the report consists in the report of the laws enacted by the Legislature of New-Jersey, in reference to the trout-fishing rights of New-Jersey and Pennsylvania over the fisheries of the Delaware; and also the agreements on the subject entered into by the representatives of the two States at various times.

SIX-CLOSING LINE OF STOCKWOODES, DOWNTON, ETC.—A VERY INTERESTING SELF-SETTING LINE FOR SWARMING-DOORS, &c., &c. opening in one or both directions, has been devised by Koch of Berlin. It is said to allow the door to move easily and noiselessly, and also to be fixed at an angle of a little more than 90 degrees. It is fitted, without any fastening, a full description of which is given in the article.

The door moves on a pivot at the top and bottom, to which it is firmly screwed, and which has the pivot attached to it beneath, and also a small wheel a little in front of the pivot. As the door is opened this small wheel moves up in front of a lever, the other arm of which is in contact with the end of a short central horizontal spring, which carries the door back to its normal position, as soon as it is released, the power being given off just when the door is released, and diminishing until it is completely closed. The spring, lever, &c., are enclosed in a stout iron box, covered with a brass plate, screwed on to the outer side of the level of the door. The upper pivot set in the center of the door is set in a trough which has a slot and set so far, so that it can be moved forward or backward slightly, and thus be adjusted to any movement in making the door. The upper pivot is let into the top of the door and rests upon one end of a lever, also let into the top of the door, and is forced up into the socket by a screw fitting on the other end of the lever, under the front of the door, thus rendering it easy to hang or remove.

THE MECHANICAL PRODUCTION OF GOLD.—Mr. A. C. Kirk has offered a memoir on the mechanical production of gold to the Royal Institution of Civil Engineers, which attracted extended discussion and will probably lead to material improvements in many of the mechanical arts. He states that his attention was first drawn to the subject by noticing the thermometer experienced at certain malinelli mills, works, where it was customary to extract the solid paraffin in winter by exposing the material to a low temperature sufficient to cause the paraffin to crystallize. At those works chemical methods of producing low temperatures had been introduced in order to avoid the otherwise expensive loss of time. These methods were too objectionable to be continued long, and the author was requested, as engineer to the works, to examine the methods invented by Dr. Gorrie, who had constructed a machine that was said to have produced ice in Florida. Mr. Kirk's early experiments with machines similar to those of Dr. Gorrie having been unsatisfactory, attention was turned to an air engine, the reversal of whose processes was thought ought to make a good cooling machine; and, in fact, after many modifications and reconstructions, a degree of cold was produced by it sufficient to freeze mercury. This machine may be in the main described as follows: A steam engine moves a piston backward and forward, by which the confined air is in a state of alternate compression and expansion. While the air is compressed in one space the heat generated thereby is removed by a stream of water flowing through properly arranged pipes; and, in fact, after many modifications and reconstructions, a degree of cold was produced by it sufficient to freeze mercury. This machine may be in the main described as follows: A steam engine moves a piston backward and forward, by which the confined air is in a state of alternate compression and expansion. While the air is compressed in one space the heat generated thereby is removed by a stream of water flowing through properly arranged pipes; and, while the air is expanded and cooling in the other space, heat is conducted from whatever has been placed in a space properly arranged beneath it.

Messrs. D. Appleton & Co. will publish during the fall several new volumes of the little History and Literature Primers. Small as they are, they have commanded the best workmanship of several leading writers. W. A. French will write the one on Europe; J. B. Green, the general history, on England; Miss Fawcett, on France; and others on Germany, on English literature; the Rev. Dr. Parr on Latin literature, and C. Gibb on Greek literature.

Mrs. Whittle and Bliss of Chicago, who had spent very successful religious meetings in Kentucky and Tennessee, are about to visit Minnesota. A preparatory service will be held a few days ago in the Music Hall of the City of St. Paul, at which Rogers, Weatherby and Holman of London addressed the people, giving an account of the work of Messrs. Moody and Sankey in the British metropolis. They expressed the opinion very confidently that its effect in England would be lasting.

A recent report made by a Committee of the Board of Jewish Deputies in London upon the condition of the Hebrews in the City of Jerusalem contains some facts of interest. They estimate the whole number of the Jewish inhabitants of Jerusalem to be 13,000. Of these a large proportion are immigrants from Eastern Europe, who subsist upon charity. The Committee's account of their birthplace in the Holy City is by no means satisfactory.

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Mrs. Whittle has written a book called "The Mists of Florence," which will be issued by Messrs. Macmillan & Co. as a holiday book, in the inexpensive style of "Hawthorne," with illustrations on steel and wood. The volume is one of "sketches of ports, peoples, and pictures of Florence and her city," and the author's sketches written in her pictures, "to give the many loves of Florence such a picture of her past life, and the men who have made her what she is, as shall put them in the collection of her pictures." Her aim is to write a history, but to touch the subject with the lighter hand of many noble figures which adorned the valley in the past." The Rev. Dr. D. X. Denison delivered a poem entitled the "Scotch Irish Presbyterian," which interested the hand of many nobles which adorned the valley in the past." The Rev. Dr. D. X. Denison delivered a poem entitled the "Scotch Irish Presbyterian," which interested the hand of many nobles which adorned the valley in the past." The Rev. Dr. D. X. Denison delivered a poem entitled the "Scotch Irish Presbyterian," which interested the hand of many nobles which adorned the valley in the past."

In addition to the above, there are poems by EDGAR FAWCETT, Mrs. PLATT, and others, and the always excellent editorial department of Recent Literature, Art, and Education.

TERMS.—\$2.00 a number; \$8.00 a year. H. O. Houghton & Company, Boston. H. H. & H. Houghton, New-York.

RELIGIOUS INTELLIGENCE.

Mrs. Moody and Sankey have been invited by a public meeting to visit New-Zealand.

The closing of the Catholic religious establishments in France goes on constantly.

The Newark Presbytery has adopted resolutions strongly condemning Sunday excursion trips.

The colored Pastors of Georgia purpose to found a Normal and Theological School at Atlanta.

The Rev. Robert Laird Collier has returned to Chicago. His health is improved, but not restored.

The American Board of Commissioners for Foreign Missions closed its financial year with a debt of over \$80,000.

Three years is the average term of Congregational pastors in Connecticut. In New-London County the average is eleven years.

The Committee of Foreign Missions and Secretaries of the Southern Presbyterians Church has transferred its office to Baltimore.

Prof. Park of Andover, after a year's residence in India, has been for years.

He presented his lecture on the condition of Italy.

Mr. Pease, Superintendent of New-Orleans, asked and obtained a reduction of 10 per cent. of the salaries of the faculty.

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